

## **6.0 PERMIT AND REGULATORY REQUIREMENTS**

EPA regulates municipal biosolids disposal under the Clean Water Act (40 *CFR* 503), with the Congressional mandate to reduce the potential environmental risks and maximize the beneficial use of biosolids (DOE 1996). In Tennessee, TDEC does not issue permits for land application practices but does approve each site that will be used for land application operations. Permits (EPA 1997) to land apply biosolids are issued directly from EPA, Region IV for POTWs located in Tennessee.

### **4 to 10 mrem/yr Dose Planning level Increase**

Concurrence for raising the existing ORR biosolids land application site radionuclide planning levels from 4 to 10 mrem/yr has already been granted at the request of the City of Oak Ridge by the TDEC Division of Radiological Health. A copy of the approval letter is available in *Appendix A*. Since EPA does not regulate radionuclides within biosolids materials, a revision to the existing EPA land application permit will not be necessary. No additional permits or approvals will be required for the proposed radionuclide loading increase beyond DOE-ORO approval.

It is the policy of DOE to keep radiation exposures as low as reasonably achievable (ALARA) below applicable dose limits. DOE notices and regulations specifically require the application of the ALARA process for radiation protection of workers and the public and the environment. DOE (1991) provides guidance on the procedures for applying the ALARA process for compliance with DOE 5400.5. The guidance states that both "...DOE Orders and regulations recognize that ALARA decisions require consideration of a broad range of technical and social considerations and recommend that the bases for ALARA judgments be documented." ALARA considerations are identified throughout the text of this analysis.

### **West End Treatment Facility Effluents**

The TDEC Division of Radiological Health regulates discharges of radionuclides to POTWs by licensed nuclear material facilities under *State Regulation for Protection Against Radiation*. In Oak Ridge, sewer effluents are specifically regulated for each licensee by a license condition; the limits for the license conditions are set via consultations between the City of Oak Ridge POTW and the Division of Radiological Health. Generic effluent radiological release concentration limits are lower than those of the NRC.

DOE regulates its discharge of radionuclides to sewers in DOE Order 5400.5: "...the control of releases of liquid wastes to community sanitary sewer systems is designed to be generally consistent with requirements imposed by the Nuclear Regulatory Commission on its licensees..." (Chapter I, Sect. 7) (DOE 1996). DOE Order 5400.5 specifies concentration discharge limits for radionuclides. Regulation of source, special nuclear, and by-product material was reserved to the Atomic Energy Commission under the Atomic Energy Act of 1954, as amended. That regulatory authority passed to the Atomic Energy Commission successor agencies: NRC (and agreement states, including Tennessee, for privately-owned nuclear facilities) and DOE (for its government-owned nuclear facilities). DOE regulation currently applies to the radionuclides in treated WETF wastewaters being added to the City of Oak Ridge POTW. All discharges from WETF to the Y-12 and City of Oak Ridge Sanitary Sewer Systems will be conducted in accordance with DOE Order 5400.5 limitations and criteria. In addition, WETF discharges would be required to meet pretreatment standards and prescribed sanitary discharge limits as required of the Y-12 Plant in order to be compatible with the city's industrial pretreatment program.

Discharge of treated WETF effluents would require the Y-12 Plant to modify their existing industrial discharge permit (IDP) with the City of Oak Ridge to include the additional uranium and nickel levels contained in WETF effluents. The City of Oak Ridge would respond to the request with a modified IDP to include WETF discharges. Specific language regarding the type and number of samples to be taken for treated WETF effluents will be included in the Y-12 IDP.

After the Y-12 IDP has been modified and approved by the City of Oak Ridge, contaminant limits will be issued for WETF by BWXT. When all sampling and analysis has been conducted on treated wastewaters ready for discharge to the sanitary sewer system, results will be forwarded to the Y-12 BWXT Sanitary Sewer Compliance Coordinator for approval to discharge. After approval has been received, discharges to the sewer system will commence. WETF discharges may be interrupted by Y-12 for any number of reasons (i.e., flooding, water line breakage, etc.). If WETF discharges are requested to cease, the discharge pump will be turned off and the appropriate valving closed to ensure that effluent flow to the sewer system halts. Discharges will resume upon notification from the Y-12 BWXT Sanitary Sewer Compliance Coordinator. In extended periods of delay, discharge through the existing WETF NPDES Outfall #502 may proceed, provided all contaminant limitations can be met.